

**MEMORANDUM OF UNDERSTANDING**  
**BETWEEN THE**  
**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**  
**AND THE**  
**BIOTECHNOLOGY INDUSTRY ORGANIZATION**

**I. BACKGROUND**

The Biotechnology Industry Organization (BIO) serves and represents the biotechnology industry. BIO represents more than 1000 biotechnology companies, academic institutions, state biotechnology centers, and related organizations in 50 states and 33 nations. BIO members are involved in the research and development of health care, agricultural, industrial, and environmental biotechnology products. BIO supports industry by providing services such as business development (including finance, joint venture, partnering and investor opportunities), communication, networking, and advocacy.

The National Aeronautics and Space Administration (NASA) mission includes advancing human exploration, use, and development of space. NASA's goals include using the space environment as a laboratory to test the fundamental principles of physics, chemistry, and biology and to enable and promote the commercial development of, and research in, space. Biotechnology research has been performed on the Space Shuttle and other platforms. The advent of the International Space Station (ISS) offers new opportunities for expanded research and commercial development.

The Agency recognizes the importance of biotechnology as an expanding industry with increasing importance for human health, the nation's economy, and space exploration. Biological research and biotechnology is advanced through research on the ISS and is an enabler of long-term human presence in space.

**II. PURPOSE AND SCOPE**

NASA and BIO enter into this Memorandum of Understanding (MOU) for the purpose of establishing a framework for a relationship under which NASA and BIO will cooperate in areas of mutual interest. It is envisioned that the initial association between NASA and BIO will focus on establishing communication and linkages between NASA and BIO, including enhanced NASA participation at BIO conferences and membership meetings.

Future interaction may extend to increasing collaborations between NASA-sponsored scientific and commercial researchers, and BIO member organizations, to advance biotechnology research and commercial development on the ground and in space. This MOU provides a framework for initial interaction and enables future cooperation.

### **III. GENERAL TERMS**

This agreement does not obligate NASA or BIO to any expenditure of funds. Additional agreements may be established to further define and implement elements of this MOU. NASA representatives will not be involved in any BIO activities that are or may be perceived to be lobbying. NASA representatives will not make any statements that imply endorsement of a business, product, or service. The duration of this MOU is three years from the date of signing. Each party may withdraw from this agreement by providing 60 days written notice.

### **IV. GOALS AND AREAS OF COOPERATION**

The goals of NASA and BIO cooperation include:

- Enhanced communication and interaction between NASA and the biotechnology industry regarding space and biotechnology research results, plans, and opportunities;
- Expanded commercial biotechnology space research and development and development of new businesses and commercial products and processes;
- Formal and informal education of industry and the public regarding biotechnology and space research.

NASA and BIO agree to the following areas of cooperation:

- Identify points of contact and liaisons between the two organizations.
- Establish working relationships between NASA (including NASA Headquarters, NASA commercialization efforts and programs, and NASA Field Centers) and BIO (including BIO leadership, staff, Councils, Sections and Committees).
- Enhance cooperation between the NASA Space Product Development Program, NASA Commercial Space Centers (CSCs), and CSC Industry Partners and BIO.
- Increase communication between the organizations via outreach activities and media (including newsletters and Web sites).
- Exchange information regarding NASA and CSC programs and scientific and commercial research opportunities and NASA advisory committees.
- Increase NASA participation in BIO conferences.

- Provide opportunities for site visits to BIO member organizations, NASA, CSCs, or CSC Industry Partners.
- Develop biotechnology and space-related educational (formal and informal) and general outreach programs and activities.
- Increase industry space-related biotechnological research and development by providing forums to stimulate joint ventures and developing other programs and projects.

_____ Sean O’Keefe Administrator National Aeronautics and Space Administration	_____ Date
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_____ Carl Feldbaum President Biotechnology Industry Organization	_____ Date
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